

Fixed Gauge Audit Checklist

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| A. If the mailing address or permanent address changed, has the license has been amended to reflect the change? | N/A | Yes | No |
| B. If ownership changed or bankruptcy filed, was the Agency's prior consent obtained or was the Agency notified? | N/A | Yes | No |
| C. If the RSO was changed, was license amended? | N/A | Yes | No |
| D. Does new RSO meet the Agency training requirements? | N/A | Yes | No |
| E. Is the RSO fulfilling his/her duties? | N/A | Yes | No |
| F. To whom does the RSO report? _____ | | | |
| G. If the designated contact person for the Agency changed, was the Agency notified? | N/A | Yes | No |
| H. Does the license authorize all of the Agency-regulated radionuclides contained in gauges possessed? | N/A | Yes | No |
| I. Are the gauges as described in the Sealed Source and Device (SSD) Registration Certificate or Sheet? | | Yes | No |
| Have copies of (or access to) SSD Certificates? | | Yes | No |
| Have manufacturers' manuals for operation and maintenance? | | Yes | No |
| J. Are the actual uses of gauges consistent with the authorized uses listed on the license? | N/A | Yes | No |
| K. Is company management appropriately involved with the radiation protection program and oversight of the RSO's activities? | | Yes | No |
| L. Does RSO have sufficient time to perform all duties/responsibilities? | | Yes | No |

3. Training and Instructions to Workers

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| A. Were all workers who are likely to exceed 100 mrem/yr provided radiation awareness training per 180 NAC 10-003? | Yes | No |
| B. Did each authorized user complete a 8 hour course provided by the manufacturer of the device or any agency approved course? | Yes | No |
| C. Are training records maintained for each gauge operator? | Yes | No |
| D. Did interviews with operators reveal that they know the emergency procedures? | Yes | No |

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| M. Did this audit include observations of operators: | | | |
| using the gauge in a field situation? | | Yes | No |
| Operating the gauge? | | Yes | No |
| Performing routine cleaning and lubrication? | | Yes | No |
| Transporting the gauge? | | Yes | No |
| Storing the gauge? | | Yes | No |
- E. HAZMAT training provided as required? [49 CFR 172.700, 49 CFR 172.701, CFR 172.702, 49 CFR 172.703, 49 CFR 172.704] N/A Yes No

4. Radiation Survey Instruments

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|--|-----|-----|----|
| A. If the licensee possesses its own survey meter, does it meet the Agency's criteria? | N/A | Yes | No |
| B. If the licensee does not possess a survey meter, are specific plans made to have one available? | N/A | Yes | No |
| C. Is the survey meter needed for non-routine maintenance calibrated as required (180 NAC 4-021)? | N/A | Yes | No |
| D. Are calibration records maintained (180 NAC 4-048)? | N/A | Yes | No |

5. Gauge Inventory

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|--|-----|-----|----|
| A. Is a record kept showing the receipt & transfer/disposal of each gauge? (180 NAC 1-004) | | Yes | No |
| B. Are all gauges received physically inventoried every six months? | N/A | Yes | No |
| C. Are records of inventory results with appropriate information maintained? | | Yes | No |

6. Personnel Radiation Protection

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| A. Are ALARA considerations incorporated into the radiation protection program? (180 NAC 4-004.02) | Yes | No |
| B. Is documentation kept showing that unmonitored users receive $\leq 10\%$ of limit? (180 NAC 4-022.01) | Yes | No |
| C. Did unmonitored users' activities change during the year which could put them over 10% of limit? | Yes | No |
| D. If yes to c. above, was a new evaluation performed? | | Yes |
| No | | |

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| E. Is external dosimetry required (user receiving >10% of limit)? | Yes | No |
| And is dosimetry provided to users? | Yes | No |
| 1) Is the dosimetry supplier NVLAP approved? (180 NAC 4-021.03) | Yes | No |
| 2) Are the dosimeters exchanged monthly for film badges and at industry recommended frequency for TLDs? | Yes | No |
| 3) Are dosimetry reports reviewed by the RSO when they are received? | Yes | No |
| 4) Are the records Agency Forms or equivalent?
(180 NAC 4-009.04, 180 NAC 4-052.03) | Yes | No |
| • NRH-1 "Cumulative Occupational Exposure History" completed? | Yes | No |
| • NRH-2 "Occupational Exposure Record for a Monitoring Period" completed? | Yes | No |
| 5) If a worker declared her pregnancy, did licensee comply with (180 NAC 4-012)? | Yes | No |
| • Were records kept of embryo/fetus dose per 180 NAC 4-052.04? | Yes | No |
| F. Are records of exposures, surveys, monitoring, and evaluations maintained (180 NAC 4-047, 180 NAC 4-48, 180 NAC 4-052) | Yes | No |

7. Public Dose

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| A. Are gauges stored in a manner to keep doses below 100 mrem in a year? (180 NAC 4-013.01, Item 1) | Yes | No |
| B. Has a survey or evaluation been performed per 180 NAC 4-021.01? | Yes | No |
| Have there been any additions or changes to the storage, security, or use of surrounding areas that would necessitate a new survey or evaluation? | Yes | No |
| C. Do unrestricted area radiation levels exceed 2 mrem in any one hour? (180 NAC 4-013.01, Item 2) | Yes | No |
| D. Are gauges being controlled in a manner that would prevent unauthorized use or removal? (180 NAC 4-031) | Yes | No |
| E. Records maintained? (180 NAC 4-048, 180 NAC 4-053] | Yes | No |

8. Operating and Emergency Procedures

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| A. Have operating and emergency procedures been developed? | Yes | No |
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| B. Do they contain the required elements? | Yes | No |
| C. Does each individual working with the gauges have a current copy of the operating and emergency procedures (including lock-out procedures and emergency telephone numbers)? | Yes | No |
| D. Is a lock-out warning sign posted at each entryway to an area where it is possible to be exposed to the beam? | Yes | No |
| E. Does the operating and emergency procedures list the correct phone number for the RSO and the Agency? | Yes | No |
| F. Did any emergencies occur? | Yes | No |
| If so, and were they handled properly by operator? | Yes | No |
| Were appropriate corrective actions taken? | Yes | No |

9. Leak Tests

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| A. Was each sealed source leak tested every 6 months or at other prescribed intervals? | Yes | No |
| B. Was the leak test performed as described in correspondence with the Agency and according to the license? | Yes | No |
| C. Are records of results retained with the appropriate information included? | Yes | No |
| D. Were any sources found leaking ? | Yes | No |
| And if yes, was the Agency notified? | Yes | No |

10. Maintenance of Gauges

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| A. Are manufacturer's procedures followed for routine cleaning and lubrication of gauge? | Yes | No |
| B. Was each on-off mechanism tested for proper operation every 6 months or at other prescribed intervals? | Yes | No |
| D. Are repair and maintenance of components related to the radiological safety of the gauge performed by the manufacturer, distributor or person specifically authorized by the Agency, NRC or Agreement State and according to license requirements (e.g. extent of work, procedures, dosimetry, survey instrument, compliance with 180 NAC 4-013? | Yes | No |
| E. Is non-routine maintenance performed in-house? | Yes | No |

F. Is yes to E., is non-routine gauge maintenance conducted by authorized personnel following procedures approved by the Agency? Yes No

G. Are labels, signs, and postings identifying gauges containing radioactive material, radiation areas, and lock-out procedures/warnings clean and legible? Yes No

11. Transportation

(Note: This section will not apply if you have not transported gauges during the period covered by this audit.)

A. Only DOT-7A or other authorized packages is used to transport gauges? [49 CFR 173.415, 49 CFR 173.416(b)] Yes No

B. Package performance test records are on file? Yes No

C. Special form sources documentation? [49 CFR 173.476(a)] Yes No

D. Package has 2 labels (ex. Yellow-II) with TI, Nuclide, Activity, and Hazard Class? [49 CFR 172.403, 49 CFR 173.441] Yes No

E. Packages used to ship gauges properly marked and labeled per 49 CFR 172.301, 49 CFR 172.304, 49 CFR 172.310 49 CFR 172.324? Yes No

F. Shipping containers properly locked, blocked & braced prior to transport? [49 CFR 173.475(f)] Yes No

G. Shipping papers prepared and used? [49 CFR 172.200(a)] Yes No

H. Shipping papers contain proper entries? {Shipping name, Hazard Class, Identification Number (UN Number), Total Quantity, Package Type, Nuclide, RQ, Radioactive Material, Physical and Chemical Form, Activity, category of label, TI, Shipper's Name, Certification and Signature, Emergency Response Phone Number, Cargo Aircraft Only (if applicable)} [49 CFR 172.200, 49 CFR 172.201, 49 CFR 172.202, 49 CFR 172.203, 49 CFR 172.204, 49 CFR 172.604] Yes No

I. Shipping papers within drivers reach and readily accessible during transport? [49 CFR 177. 817(e)] Yes No

J. Secured against movement? [49 CFR 177. 834] Yes No

K. Placarded on vehicle, if needed? [49 CFR 172.504] Yes No

L. Proper overpacks, if used? [49 CFR 173.25] Yes No

M. Any incidents reported to DOT? [49 CFR 171.15, 16] Yes No

12. Auditor's Independent Survey Measurements (If Made)

- A. Describe the type, location, and results of measurements. Do any radiation level exceed regulatory limits?_____

13. Notification and Reports

- A. Was any radioactive material lost or stolen? (180 NAC 4-057,
180 NAC 3-026) Yes No
If yes, were reports made? Yes No

- B. Did any reportable incidents occur? (180 NAC 4-058,
180 NAC 3-026) Yes No
If yes were reports made? Yes No

- C. Did any overexposures and high radiation levels occur? (180 NAC 4-059,
180 NAC 3-026) Yes No

Reported? Yes No

- N. If any events (as described in items a through c above) did occur, what was root cause?

Were corrective actions appropriate?_ Yes No

- F. Is the licensee aware of telephone number for the Agency Emergency
Operations Center? Yes No

14. Posting and Labeling

- A. Following documents are posted at permanent facility:
NRH-3 "Notice to Employees" posted (180 NAC 10-002) Yes No

- B. Below documents are posted or a notice indicating the location of the
following documents.? Yes No
. Title 180 NAC Yes No
Operating &Emergency Procedures Yes No
Lock-out Procedures Yes No

The license, conditions or documents incorporated into the license by reference and amendments	Yes	No
Any notice of violation involving radiological working conditions, proposed imposition of civil penalties, or order issued to 180 NAC 1 and any response from the licensee.	NA	Yes No

- C. Radiation signs: (180 NAC 4-034, 180 NAC 4-035)
- 1) “Caution (or Danger), Radioactive Material” signs: posted at facility (unlessdocumentation kept describing eligibility for exception described 180 NAC 4-035?
- Yes No
- D. Gauges bear durable, clearly visible labels w/ radiation symbol, “Caution (or Danger), Radioactive Material” warning, & sufficient information to permit individuals to avoid/minimize exposures?
- Yes No

15.Record Keeping for Decommissioning

- A. Records kept of information important to decommissioning? (180 NAC 3-017.07)
- Yes No
- B. Records include all information outlined in (180 NAC 3-017.07)?
- Yes No

16.Bulletins and Information Notices

- a. Agency Bulletins, Agency Information Notices, Agency Newsletters, received?
- Yes No
- B. Appropriate training and action taken in response?
- Yes No

17.Special License Conditions or Issues

- A. Did auditor review special license conditions or other issues (e.g., non-routine maintenance)?
- Yes No

18.Deficiencies Identified in Audit; Corrective Actions

- A. Summarize problems/deficiencies identified during audit.
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B. If problems/deficiencies identified in this audit, describe corrective actions planned or taken. Are corrective actions planned or taken at ALL licensed locations (not just location audited)?

c. Provide any other recommendations for improvement.

19. Evaluation of Other Factors

A. Senior licensee management is appropriately involved with the radiation protection program and/or Radiation Safety Officer (RSO) oversight? Yes No

B. RSO has sufficient time to perform his/her radiation safety duties? Yes No

C. Licensee has sufficient staff to support the radiation protection program? Yes No